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EXAMINER

ORLANDO, MICHAEL N

ART UNIT	PAPER NUMBER
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1791

NOTIFICATION DATE	DELIVERY MODE
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11/05/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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patentmail@whda.com

Office Action Summary	Application No. 10/573,706	Applicant(s) TOMOGUCHI ET AL.	
	Examiner MICHAEL N. ORLANDO	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The arguments submitted 06/19/2009 have been fully considered and the 112 issue is hereby withdrawn. The merits of the claims, however, remain unpatentable over the prior art as set forth below.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 6, 10-11, 13 and 17-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sugino et al. (US 2003/0137732).

Regarding the claims, Sugino discloses the bonding of a polarizer to a transparent film via a PVA base adhesive whereby the adhesive includes water soluble crosslinking agents and a thickness of 20-100nm ([0076]). The adhesive can be applied to either the transparent layer first or the polarizer ([0076]). The adhesive itself is an aqueous solution and therefore the aqueous solution has a viscosity near to water. Sugino discloses that the adhesive is blended with the aqueous based additives when coating. The polymer film is recognized to be transparent and cellulose based ([0064]). The polarizer is PVA based and can have thickness of 5-35um ([0020], [0022]). The adhesive itself and the additives to be blended are both aqueous solutions and since aqueous by definition means water is the solvent it is clear that water is present at the bonding surface for bonding. The order of addition is satisfied by the fact that the parts

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are bonded via an aqueous adhesive and therefore the adhesive and aqueous contacts are satisfied and as indicated above Sugino appreciates that the adhesive solution may be added to either side first. The crosslinking agent included is water soluble and the solution is aqueous, therefore the crosslinker would be dissolved.

Sugino discloses nothing to indicate the adhesion process is discontinuous as such it is clear that there would be no reason to use such a process unless blatantly directed to do so. Nonetheless the examiner notes that, the courts have upheld in the past that merely requiring a process to be continuous has been a matter of obviousness (In re Dilnot, 319 F.2d 188, 138 USPQ 248, CCPA 1963).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sugino et al. (US 2003/0137732) further in view of in view of either Applicant's admitted prior art or Shuichi et al. (JP 7198945).

Regarding claim 5, the method of claim 1 is taught as seen above; however, the prior art of reference fails to teach the PVA based adhesive having an acetoacetyl group.

Applicant's admitted prior art discloses it was known in the art (through JP 7198945) that PVA based adhesives having an acetoacetyl group and a cross-linking agent were known (specification [0007]). Alternatively the same teachings can be found in Shuichi et al. (abstract).

It would have been obvious to one having ordinary skill in the art at the time of the invention to have included the PVA based adhesives having an acetoacetyl group and a cross-linking agent because as applicant admits such was known in the art for providing improved heat resistance and water resistance (see above cited).

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5. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugino et al. (US 2003/0137732), as applied to claim 1 above, in view of either Okazaki et al. (US 5,945,209) or general knowledge in the art.

Regarding claims 7 and 12, Sugino fails to explicitly teach claimed cross-linking agent, but does recognize the use of cross-linking agents ([0076]). Notes also that methylol is merely a primary alcohol and Sugino does disclose the use of alcohol group containing crosslinkers ([0076]). Nonetheless, further motivation is provided below.

Okazaki et al. teaches that cross-linking agents including methylol compounds are known and can be used in combination with a binder (i.e. adhesive) (column 51, line 55 - column 52, line 6).

It would have been obvious to one having ordinary skill in the art at the time of the invention to have utilized a cross-linking agent including methylol groups because, as presented above, Sugino appreciates the use of crosslinkers and moreover those with alcohol groups and Okazaki specifically presents that methylol group containing cross-linking agents were available in the art at the time of the invention and moreover applicable for use with an adhesive. The examiner further contends that it would have also been obvious to one having ordinary skill in the art at the time the invention was made to use a cross-linking agent containing methylol compounds, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

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6. Claims 9, 14-16 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugino et al. (US 2003/0137732).

Regarding claim 9, the aqueous solution of Sugino is water based and therefore has a viscosity of at or around that of water which falls within the claimed range.

Regarding claims 14-16, the order of addition is satisfied by the fact that the parts are bonded via an aqueous adhesive and therefore the adhesive and aqueous contacts are satisfied and as indicated above Sugino appreciates that the adhesive solution may be added to either side first ([0076]). Given this teaching it is therefore appreciated by Sugino that the addition procedure is not as critical as the fact that adhesive components and aqueous solution are present on the components at the time of bonding. Also, in this case merely separating some of the components and then remarrying them at the time of bonding is taken as obvious since Sugino discloses all the parts (aqueous solution along with adhesive) and court have held that merely making two things separable is matter of obviousness (*In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961)).

Regarding claims 21 and 22, such is merely referring to the operating conditions for the automated performance of claim 1. As set forth above the amount of adhesive (i.e. thickness) was known and such a thickness which would have merely been the result of both the transport velocity and supply quantity. Choosing various speeds/quantities to achieve such a thickness is therefore obvious. It would have been an obvious choice for the operator to choose speeds which achieve such a thickness and to do so in a way that maximizes operating efficiency (i.e. speed) without sacrificing

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quality. Also, merely providing a broad automatic means for the purpose of carrying out a known method is a matter of obviousness (In re Venner, 262 F.2d 91, 95, 120 USPQ 193, 194, CCPA 1958).

Regarding claim 23, Sugino (the provider of the aqueous solution) does not explicitly state applying the solution to the adhering surface in a time of less than 30sec from the supply thereof. As set forth above Sugino clearly appreciates the importance of the aqueous based adhesive at the adhesion interface for bonding. Given the recognized importance of the wetness of the bonding interface at the time of adhesion as set forth by Sugino it would have clearly motivated an ordinary skilled artisan to perform bonding immediately (or as soon as possible) after adding the wetting solution so as to prevent/lower the chances that adhesive (that is mated with the crosslinker) will begin to prematurely cure.

7. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugino et al. (US 2003/0137732), as applied above, and further optionally in view of Kanter (US 4,737,410).

Regarding claims 24-26, Sugino specifically recognizes the use of PVOH-based adhesives as indicated above. It is common in the art of adhesives to use a solvent and an ordinary skilled artisan would have been motivated to do in for the purpose of increasing coatability as evidenced by Kanter (column 10, lines 20-22) whereby it was provided that solvent can be added to tailor the viscosity of an adhesive in order to dictate its coatability. The amount of adhesive is merely a function of the coatability and therefore obvious in view of its function as a result effective variable. Given the fact that

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dilute adhesive solutions in water (as the solvent) were known to be useful in bonding applications for light polarizers it would have been obvious to utilize such with the present invention. It would have therefore been obvious to include the specific use of 0.5-2% adhesive solutions since it has been held that where the general conditions of a claim are disclosed in the prior art (i.e. using heavily diluted adhesive solutions), discovering the optimum or workable ranges (i.e. differing dilutions) involves only routine skill in the art. (*In re Aller*, 105 USPQ 233). Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range. "The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02 - § 716.02(g) for a discussion of criticality and unexpected results.

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Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-4, 6, 9-11 and 13-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higashio et al. (US 2003/0072078 A1) in view of Sugino et al. (US 2003/0137732) further in view of Rogers (US 2,263,249).

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Regarding claims 1, 13 and 18 Higashio discloses a method of manufacturing a polarizing plate by laminating a transparent protective layer ([0008], [0044]) to a polarizing film (i.e. polarizer. The laminating method includes utilizing an adhesive interposed there between whereby the adhesive can be applied directly to the transparent film and/or the polarizer ([0055]). Higashio teaches that the adhesive layer thickness in general is in the range of 1-500 μ m ([0059]).

Higashio fails to disclose the use of an aqueous liquid, which comprises no adhesives on the adhering surface when the polarizer and transparent film layer are adhered. Higashio also fails to teach the specific adhesive thickness.

Rogers teaches a method for making a laminated light polarizer whereby a polyvinyl alcohol based adhesive is used and water is applied to the bonding surface for the purpose of insuring uniform contact between the polarizing film and a substrate (column 4, lines 40-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the invention of Higashio to include adding water to the bonding interface in view of Rogers because such was known insure uniform contact between bonding surfaces, which would have served the purpose of providing for a clean, uniform seal between the two surfaces by limiting weak adhering locations and or appearance flaws which would have arisen with a non-uniform adherence. As to the thickness range Although Higashio fails to explicitly teach the range of less than 30-300nm the general concept of the adhesive layer is taught and it would have therefore been obvious to include the specific use of the thickness range of 30-300nm since it has

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been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 233). Also, the adhesive is layer was being provided for adhesion and as such it would have been an obvious choice to modify the thickness as a factor of both the desired level of adhesion and subsequent cost considerations (i.e. it would have been obvious to use a thinner layer in order to reduce cost especially in cases where less adhesion was required). Also, the courts have upheld in the past that merely requiring a process to be continuous has been a matter of obviousness (*In re Dilnot*, 319 F.2d 188, 138 USPQ 248, CCPA 1963).

Sugino, drawn to the method of attaching polarizers to transparent films via PVA-based adhesives (essentially the identical field of endeavor) discloses that the preferable adhesive thickness range for such process when using such an adhesive is 10-100nm ([0076]).

Given the knowledge of Sugino in regard to adhesively attaching polarizers and transparent films it would have been obvious to have utilized a thinner adhesive thickness such as 10-100nm because such was a known and proven method of attaching polarizers to transparent films. An ordinary skilled artisan would have been motivated to use such a thickness in order to reduce costs since such was known to be useful thickness that can be successfully used to tie the two layers together.

Regarding claim 2, Higashio teaches the polarizer as a polyvinyl alcohol (PVA) based film ([0042]) and the transparent protective film as cellulose-based ([0044]).

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Regarding claim 3, Higashio teaches the polarizing film with applicable thicknesses in the range of 5-80 μ m, which clearly includes thicknesses less than 35 μ m.

Although Higashio fails to explicitly teach the range of less than 35 μ m the general concept of polarizers are taught, as is a thickness range that substantially overlaps the claimed range and it would have therefore been obvious to include the specific use of the thickness range less than 35 μ m since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 233)

Regarding claim 4, Higashio teaches the use of a polyvinyl alcohol based adhesive ([0055]).

Regarding claim 6, Higashio teaches the use of cross-linking agents with the adhesive ([0061]).

Regarding claims 9 and 10, the invention disclosed in claim 1 uses water as the aqueous liquid, which inherently has a viscosity of around 1cP (≈ 1.002).

Regarding claim 11, the method of claim 1 is presented above, but Rogers who teaches the aqueous liquid fails to teach the cross linking agent alternatively dissolved therein; however, it can be seen from the presented teachings of Higashio (for example claim 6 above) that the use of cross linking agents was known and utilized with the presented invention.

It would have been obvious to one having ordinary skill in the art at the time of the invention to have utilized the cross-linking agent as disclosed by Higashio alternatively dissolved in the aqueous liquid of Rogers because general knowledge in

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the state the art of cross-linking agents would have provided that it was merely important to have the cross-linking agents and the adhesive mated at the time of curing and may have found the alternative more appealing in cases where the aqueous liquid was able to more easily dissolve the agent. The examiner, however, notes that the presentation of the cross linking agent dissolved in the aqueous solution does not seem to yield any specific advantage over that presented in the teachings above whereby the agent is dissolved in the adhesive and subsequently mated with the aqueous solution at bonding (they all become mixed regardless).

Regarding claims 14-17, as presented in claim 1 above Higashio in view of Rogers teaches the use of water at the bonding interface before adherence in the production of a light polarizer. Rogers teaches that water may be added to the polyvinyl alcohol coating (i.e. the adhesive) or by soaking the PVOH film in an aqueous solution (column 3, lines 5-20). The above teaching present (as in the instant claim 17) that the aqueous liquid is present at the adhering surface just before the adhesion between the substrates.

Higashio in view of Rogers fails to explicitly teach the water being alternatively added to the film and or the transparent layer in addition to the teaching that the water may be added to the PVOH based adhesive at the interface.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the water any location between the bonding surfaces because the important aspect of the invention presented above is that water be present at the interface to provide for uniform bonding and there is no indication that any of the

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effectiveness will be negated by manipulating the location so long as water contacts the adhesive at the point of adherence. Moreover it would have been further obvious to try the water at other locations within the interface with there being only a finite number of predictable solutions (add to the film, add to the adhesive or add to the transparent layer) and a reasonable expectation of success for each when armed with the teachings of Rogers.

Regarding claims 19-20, Higashio specifically teaches the invention relating to the manufacture of LCD (i.e. an image viewing display) ([0001]). The examiner recognizes the polarizing film laminate produced by Higashio as an optical film due to it being a film and possessing optical properties for use in a the manufacture of LCD systems.

Regarding claims 21 and 22, such is merely referring to the operating conditions for the automated performance of claim 1. As set forth above the amount of adhesive (i.e. thickness) was known and such a thickness which would have merely been the result of both the transport velocity and supply quantity. Choosing various speeds/quantities to achieve such a thickness is therefore obvious. It would have been an obvious choice for the operator to choose speeds which achieve such a thickness and to do so in a way that maximizes operating efficiency (i.e. speed) without sacrificing quality. Also, merely providing a broad automatic means for the purpose of carrying out a known method is a matter of obviousness (In re Venner, 262 F.2d 91, 95, 120 USPQ 193, 194, CCPA 1958).

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Regarding claim 23, Rogers (the provider of the aqueous solution) does not explicitly state applying the solution to the adhering surface in a time of less than 30sec from the supply thereof. Rogers does indicate, however, that it is necessary to have the aqueous solution present at the bonding interface to ensure uniform bonding (column 4, lines 40-45) and further indicates that if the surface is allowed to dry than more aqueous solution should be added before bonding (column 3, lines 1-19). Given the recognized importance of the wetness of the bonding interface at the time of adhesion as set forth by Rogers it would have clearly motivated an ordinary skilled artisan to perform bonding immediately (or as soon as possible) after adding the wetting solution so as to fully realize its ability to provide uniform contact because increased time would have resulted in evaporation and drying of the surface which would have negated the advantageous properties.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higashio et al. (US 2003/0072078 A1), Sugino et al. (US 2003/0137732), and Rogers (US 2,263,249), as applied to claim 1 above, in view of either Applicant's admitted prior art or Shuichi et al. (JP 7198945).

Regarding claim 5, the method of claim 1 is taught as seen above; however, the prior art of reference fails to teach the PVA based adhesive having an acetoacetyl group.

Applicant's admitted prior art discloses it was known in the art (through JP 7198945) that PVA based adhesives having an acetoacetyl group and a cross-linking

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agent were known (specification [0007]). Alternatively the same teachings can be found in Shuichi et al. (abstract).

It would have been obvious to one having ordinary skill in the art at the time of the invention to have included the PVA based adhesives having an acetoacetyl group and a cross-linking agent because as applicant admits such was known in the art for providing improved heat resistance and water resistance (see above cited).

13. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higashio et al. (US 2003/0072078 A1), Sugino et al. (US 2003/0137732) and Rogers (US 2,263,249), as applied to claim 1 above, in view of either Okazaki et al. (US 5,945,209) or general knowledge in the art.

Regarding claims 7 and 12, Higashio fails to explicitly teach the compositions of the applicable cross-linking agent, but does recognize the use of cross-linking agents ([0061]). The silence as to the composition by Higashio is taken to indicate that any cross-linking agent known in the state of the art at the time of the invention would be applicable since there is no exclusion.

Okazaki et al. teaches that cross-linking agents including methylol compounds are known and can be used in combination with a binder (i.e. adhesive) (column 51, line 55 - column 52, line 6).

It would have been obvious to one having ordinary skill in the art at the time of the invention to have utilized a cross-linking agent including methylol groups because, as presented above, Higashio (as presented) is taken to be applicable for use with any known cross-linking agent and Okazaki specifically presents that methylol group

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containing cross-linking agents were available in the art at the time of the invention and moreover applicable for use with an adhesive. The examiner further contends that it would have also been obvious to one having ordinary skill in the art at the time the invention was made to use a cross-linking agent containing methylool compounds, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

14. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higashio et al. (US 2003/0072078 A1), Sugino et al. (US 2003/0137732), and Rogers (US 2,263,249), as applied above, and further optionally in view of Kanter (US 4,737,410).

Regarding claims 24-26, Higashio specifically recognizes the use of PVOH-based adhesives ([0054]). It is common in the art of adhesives to use a solvent and an ordinary skilled artisan would have been motivated to do in for the purpose of increasing coatability as evidenced by Kanter (column 10, lines 20-22) whereby it was provided that solvent can be added to tailor the viscosity of an adhesive in order to dictate its coatability. The amount of adhesive is merely a function of the coatability and therefore obvious in view of its function as a result effective variable. Also, Rogers provides a 10% solution of PVOH in water to facilitate the bonding of a light polarizer to another substrate (column 2, lines 1-15). Given the fact that dilute adhesive solutions in water (as the solvent) were known to be useful in bonding applications for light polarizers it would have been obvious to utilize such with the present invention. It would have

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therefore been obvious to include the specific use of 0.5-2% adhesive solutions since it has been held that where the general conditions of a claim are disclosed in the prior art (i.e. using heavily diluted adhesive solutions), discovering the optimum or workable ranges (i.e. differing dilutions) involves only routine skill in the art. (*In re Aller*, 105 USPQ 233). Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range. "The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02 - § 716.02(g) for a discussion of criticality and unexpected results.

Response to Arguments

Applicant's arguments filed 06/19/2009 have been fully considered but they are not persuasive.

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The applicant argues that the currently claimed process is different because it is a two stage process.

The examiner does not find language in the claims that requires a two-step process or even language in the claims that contains two different solutions (one with an adhesive layer and no aqueous liquid and one with merely an aqueous liquid). While the examiner recognizes the arguments of the applicant, the examiner cannot read limitations into the claims that are not expressly stated. In the present claims the process requires an adhesive layer and an aqueous liquid which is satisfied by Sugino. Sugino provides an adhesive mixture that includes an adhesive additive (PVA) and an aqueous liquid (water). The fact that the liquid is presented at the bonding surface indicates that both an adhesive and an aqueous liquid (water) are presented at the interface. The aqueous liquid of Sugino is water and therefore satisfies the "consisting of water". This indicates that there is adhesive (PVA) present as well as an aqueous liquid (water) at bonding. There is nothing in the claims that requires the aqueous liquid to be a separate solution provided in a two stage process as presently argued. The applicant would need to clarify the claim language to delineate the steps and the two solutions in order to substantiate the claims that such diverges from the prior art of record. The applicant would need to make it indisputably clear that the additives (adhesive and aqueous liquid) are two separate solutions added at different times.

The applicant argues that the consisting essentially of language overcomes Sugino.

The examiner disagrees because again there is nothing in the claims to separate out to the two solutions (water and adhesive). If the solvent of Sugino is read to be the aqueous liquid it reads on the present claims.

The applicant claims unexpected results.

Whether or not the unexpected results are present with a two-step process the claims do not **require** a two-step process. The applicant would need to further clarify the claim language so as to delineate the steps and solutions in order to substantiate such arguments.

The applicant argues Rogers solution and notes that Rogers does not use a cross-linking agent.

First it is noted that rejection of Sugino still applies to claim 11 (the applicant has not displayed that the PVA disrupts the novelty of the water. In addition it is noted that as set forth above Higashio generally appreciates the method of producing a polarizing plate by laminating a transparent protective layer to a polarizing film whereby an adhesive is used to bond the two and such an adhesive can be added to either of the two substrates. Higashio fails, however, to teach the presently claimed adhesive system. Rogers, which is drawn to the same general field (production of light polarizers) discloses that the system can be bonded by first applying an adhesive layer then applying water to the dried adhesive layer. As to the cross linking agent introduction it can be seen by the primary reference (Higashio) that it is known to use such in the art of producing light polarizers. A cross-linking agent is by definition an additive used to promote or regulate intermolecular covalent bonding between polymer chains, linking

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them together to create a more rigid structure. Clearly from Higashio it is known that such are used in the production of light polarizers and clearly in view of Rogers it is known to add two solutions to the bonding interface (an adhesive solution and a water solution). In this case the utilization of a known additive in the field of light polarizers to merely expectedly produce a more rigid structure that is more tightly bound would have been achieved by supplementing the adhesive with a cross-linking agent as is known in the art. The examiner recognizes that the applicant does not argue the use of cross-linking agents, but argues the introduction of such into the water of Rogers specifically. In this case two solutions are provided via Rogers's method and therefore there are only two possible ways to introduce the additive (with the adhesive or with the water). Given such a limited number of options it would have been obvious to explore each and would have been specifically obvious to explore adding such to the water because such would expectedly prevent the premature crosslinking of the adhesive because the cross-linking agent, which is necessary for ensuring a rigid structure would not be provided until the exact time of bonding. No unexpected results have been shown.

The applicant also argues the consisting essentially of language.

It is noted that in addition to the fact that the solutions are clearly delineated the applicant has not shown, beyond mere allegations, that the additive of Sugino or Higashio/Rogers actually disrupt the novelty. Also, it is noted that even if the steps are delineated in a way so as to exclude Sugino it can clearly be seen that the aqueous liquid of Rogers is a separate solution.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL N. ORLANDO whose telephone number is (571)270-5038. The examiner can normally be reached on Monday-Friday, 7:30am-5:00pm, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip C. Tucker can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MO

/Philip C Tucker/
Supervisory Patent Examiner, Art Unit 1791